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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/644,441	08/20/2003	Donald W. Dine	G00352/IUS	7039
35758	7590	05/15/2006	EXAMINER	
GKN DRIVELINE NORTH AMERICA, INC 3300 UNIVERSITY DRIVE AUBURN HILLS, MI 48326			BINDA, GREGORY JOHN	
			ART UNIT	PAPER NUMBER
			3679	

DATE MAILED: 05/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/644,441

Applicant(s)

DINE ET AL.

Examiner

Greg Binda

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2006 and 18 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1, 2, 4-7, 9-14, 20, 21 and 23-32 is/are pending in the application.
- 4a) Of the above claim(s) 31 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 2, 4-7, 9-14, 20, 21 and 23-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 22 February 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Continued Examination Under 37 CFR 1.114

2. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed April 18, 2006 in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 29, 2006 has been entered.

Election/Restrictions

3. Claims 31 & 32 withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on October 7, 2004.

Claim Objections

4. Claims 27, 30 & 31 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Each claim recites only "the tubular support member has a generally uniform thickness along its length". However, each depends from a

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claim that defines the tubular support member as having invariable inner and outer diameters (i.e. a uniform thickness along its length).

Claim Rejections - 35 USC § 102

5. Claims 1, 6, 24, 25 & 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Clifford, US 373,339. Figs. 1 & 2 show a propeller shaft assembly (see also the title) comprising: a metal tubular member 'b' having an outer surface and an inner surface that are both defined by a corresponding invariable diameter (see also "same thickness throughout" in line 45); a tubular support member 'a' having an outer surface and an inner surface that are both defined by a corresponding invariable diameter (see also "same thickness throughout" in line 45), the outer surface engaging the inner surface of the tubular member 'b' to increase the bending frequency of the propeller shaft assembly; and a connecting member 'd' fixed at each end of the tubular member (see also lines 49-53).

6. Claims 1, 6, 9, 14, 25, 27, 29 & 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Sloane, US 4,484,770. Fig. 4 shows shaft assembly comprising all the limitations of the claims.

7. Claims 1, 6, 9, 14, 25, 27, 29 & 30 are rejected under 35 U.S.C. 102(b) as being anticipated by Rubin, US 2,724,672. Fig. 3 shows a shaft assembly comprising all the limitations of the claims.

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8. Claims 1, 24, 25 & 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Reid, US 2,370,193. Fig. 2 shows a shaft assembly comprising all the limitations of the claims.

9. Claims 1, 6, 25 & 27 are rejected under 35 U.S.C. 102(b) as being anticipated by Shaw, US 151,166. Figs. 1 & 2 show a shaft assembly comprising all the limitations of the claims.

Claim Rejections - 35 USC § 103

10. Claims 1, 2, 5-7, 9, 10, 12-14, 20, 21 & 23-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNeely, US 4,560,012.

a. Claims 1, 2, 5-7, 9, 10, 12-14 & 23-30. Figs. 1-4 show a propeller shaft assembly comprising: a tubular metal shaft 32 (see also col. 5, lines 56-60); a connecting member 40, 41 fixed to each end of the tubular member; and a tubular support member 33a having a generally uniform outer diameter along its entire length engaging the interior surface of the tubular member. Figs. 1-3 show the ratio of the length of the support member 33a to the length of the tubular shaft 32 is greater than 0.25 and less than 1.0. In col. 4, lines 9-15, the tubular support member 33a is disclosed as rigid, foamed, cellular and impregnated with resin or cement. Figs. 1-4 show the inner surface of the tubular support member 33a forms a cylindrical cavity (indicated by numeral 35 in Figs. 2 & 4). McNeely does not show the cavity (formed by the uniformly thick tubular support member 33a) as entirely empty because it includes a hollow element 31. However, applicant has not disclosed that an empty cavity is necessary to the practice of the instant invention. Instead, at page 9, line 1, applicant discloses that the instant invention could

just as well be practiced without an empty cavity. As such, the use of an empty cavity is deemed to be a design consideration that fails to patentably distinguish over the prior art to McNeely.

b. Claims 20 & 21. McNeely suggests an assembly comprising the limitations of the claims, but does not expressly disclose making the tubular member with a thickness generally less than 8 mm and an outer diameter between 40 and 300 mm. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have the tubular member with a thickness generally less than 8 mm and an outer diameter between 40 and 300 mm, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Kulling*, 897 F.2d 1147, 14 USPQ2d 1056.

11. Claims 4 & 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over McNeely in view of Schuermann, EP 0 471, 240. McNeely shows all the limitations of the claims except a plurality of openings formed along the length of the tubular support member 33a. Schuermann teaches (see particularly page 5, lines 4-7 of the English language translation provided in a previous Office action) that making a tubular support member with a plurality openings provides a means for reducing weight. It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the propeller shaft of McNeely by providing the tubular support member with a plurality of holes in order to provide shaft with a means for reducing weight as taught by Schuermann.

Conclusion

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Greg Binda whose telephone number is (571) 272-7077. The examiner can normally be reached on M-F 9:30 am to 7:00 pm with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Daniel P. Stodola can be reached on (571) 272-7087. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Greg Binda
Primary Examiner
Art Unit 3679